

**WHAT IS CLAIMED IS:**

1. A combined component for a fuel cell system, comprising:

an exhaust gas catalyzer for afterburning anode exhaust gases from the fuel cell system; and

an evaporator for evaporating at least one educt to be fed to the fuel cell system; wherein

the exhaust gas catalyzer includes

a casing with a casing cover and a casing bottom,

a gas inlet and a gas outlet connection disposed on the casing cover and on the casing bottom respectively,

a gas permeable inner tube arranged coaxially with a long axis of the casing affixed to the casing cover, and

a gas-permeable outer tube disposed coaxially with the long axis of the casing joined to the casing cover,

a catalyst material in an area between the inner and the outer tube for the catalytic oxidation of the anode exhaust gas,

the outer tube having a radius ( $r_A$ ) greater than the radius ( $r_I$ ) of the inner tube, yet smaller than the radius ( $r_G$ ) of the casing; and

the evaporator is disposed between the inner tube and the outer tube, and includes

at least one inlet tube,

an outlet tube, and

at least one set of educt flow tubes connected between said at least one inlet and said outlet tube and passing around the inner tube.

2. The component according to claim 1, wherein said at least one set of educt flow tubes is substantially semicircularly parallel to one another.

3. The component according to claim 1, further comprising as part of the evaporator:

a second inlet tube and a second set of educt flow tubes.

4. The component according to claim 3, wherein both sets of educt flow tubes spiral at least once around the inner tube.

5. The component according to claim 1, wherein said at least one set of educt flow tubes has sections of reduced cross section.

6. The component according to claim 3, wherein said at least one set of educt flow tubes has sections of reduced cross section.

7. The component according to claim 5, wherein said at least one set of educt flow tubes have linings which create sections of reduced cross section.

8. The component according to claim 6, wherein said at least one set of educt flow tubes have linings which create sections of reduced cross section.

9. The component according to claim 1, wherein an inner surface of said at least one set of educt flow tubes is textured.

10. The component according to claim 3, wherein an inner surface of said at least one set of educt flow tubes is textured.

11. The component according to claim 1, wherein an outer surface of said at least one set of educt flow tubes is textured.

12. The component according to claim 3, wherein an outer surface of said at least one set of educt flow tubes is textured.

13. The component according to claim 1, wherein an outer surface of said at least one set of educt flow tubes is catalytically coated.

14. The component according to claim 3, wherein an outer surface of said at least one set of educt flow tubes is catalytically coated.